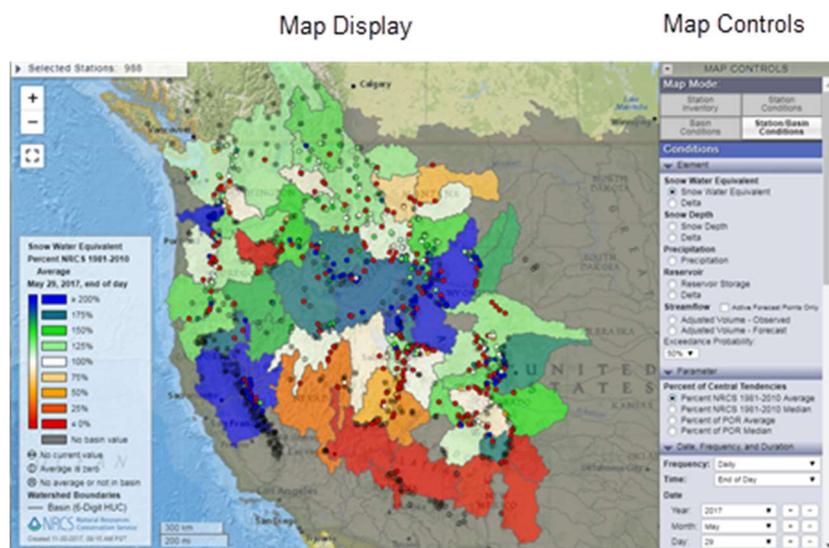


Interactive Map Guide to Views and Controls

The National Water and Climate Center's Interactive Map displays both current and historic hydrometeorological data in an easy-to-use, visual interface. The information on the map comes from many sources. Natural Resources Conservation Service snowpack and precipitation data are derived from manually-collected snow courses and automated Snow Telemetry (SNOTEL) and Soil Climate Analysis Network (SCAN) stations. Other data sources include precipitation, streamflow, and reservoir data from the U.S. Bureau of Reclamation (BoR), the Applied Climate Information System (ACIS), the U.S. Geological Survey (USGS), and other hydrometeorological monitoring entities.

The Interactive Map has two regions: the map display (on the left) and the map controls (on the right). You use the map controls to determine both the display mode and the types of data and stations to show on the map.

This page contains an overview of the features and capabilities of the Interactive Map.



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Map Components.....	3
Station Conditions Controls	8
Basin Conditions Controls	9
Station Inventory Controls.....	11

Display Modes

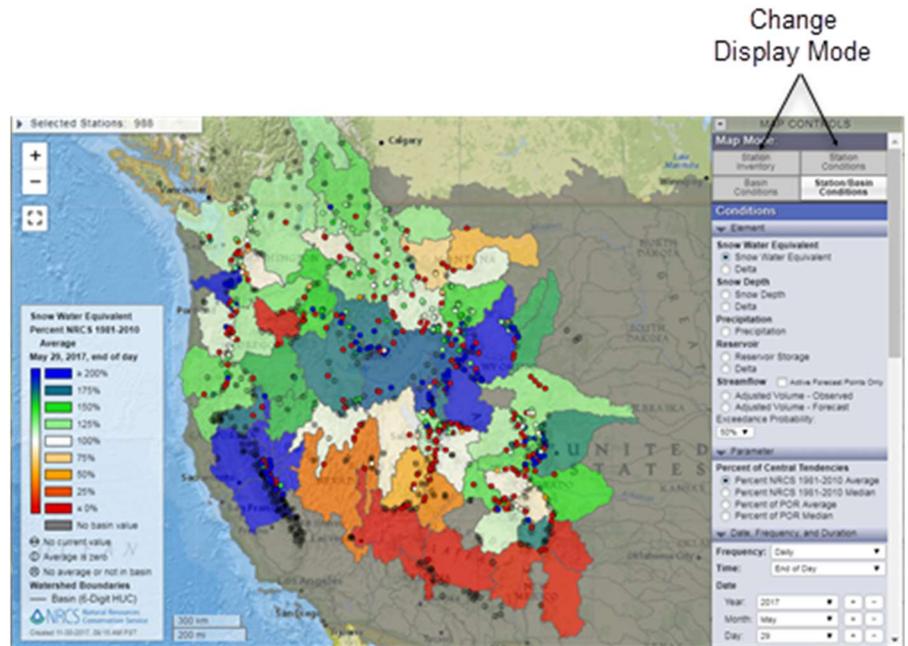
The Interactive Map has four display modes:

Station and Basin Conditions modes display stations, basins, or both stations and basins based on four criteria you supply:

1. Element, such as Precipitation.
2. Parameter, such as Period of Record (POR)
3. Hydrologic Unit Code (HUC) level (for basins only)
4. Frequency and Duration

Once these are selected, you can drill down to more information by simply hovering over or clicking on a station.

Station Inventory mode is a site-selector, allowing you to filter the display of stations by climatic Element, Location, and Data Collection Network.



Map Mode:	
Station Inventory	Station Conditions
Basin Conditions	Station/Basin Conditions

Map Components

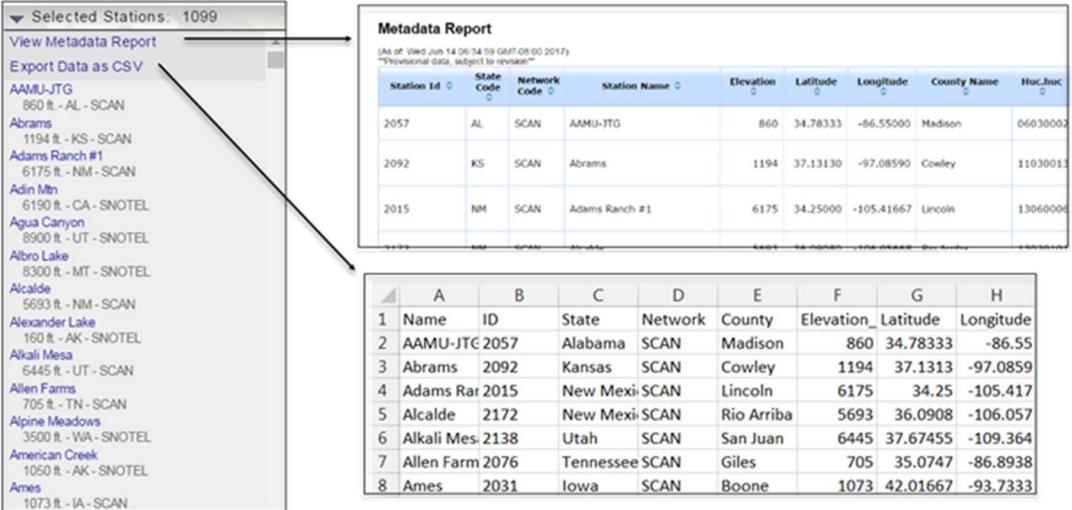
The map displays on the left portion of the page. Here are some tips for navigating the map.

Selected Stations list

The **Selected Stations** list at the top left portion of the map contains all the stations from the selected data collection networks (such as SNOTEL, SCAN, reservoir, and streamflow stations) meeting the selection criteria. Click the right arrow (▶) to expand the list. All the stations meeting the selection criteria will be displayed alphabetically. Select a station in the list to jump to that station on the map and display metadata, site information, and access to reports. The **View Metadata Report** link at the top of the Selected Stations list creates a downloadable report with metadata for all the stations in the list.

The **Export Data as CSV** link downloads a file in comma-separated value format.

Click a station to highlight it on the map



Station Id	State Code	Network Code	Station Name	Elevation	Latitude	Longitude	County Name	Huc
2057	AL	SCAN	AAMU-JTG	860	34.78333	-86.55000	Madison	0603002
2092	KS	SCAN	Abrams	1194	37.13130	-97.08590	Cowley	11030012
2015	NM	SCAN	Adams Ranch #1	6175	34.25000	-105.41667	Lincoln	13060006

	A	B	C	D	E	F	G	H
1	Name	ID	State	Network	County	Elevation	Latitude	Longitude
2	AAMU-JTG	2057	Alabama	SCAN	Madison	860	34.78333	-86.55
3	Abrams	2092	Kansas	SCAN	Cowley	1194	37.1313	-97.0859
4	Adams Ranch	2015	New Mexico	SCAN	Lincoln	6175	34.25	-105.417
5	Alcalde	2172	New Mexico	SCAN	Rio Arriba	5693	36.0908	-106.057
6	Alkali Mesa	2138	Utah	SCAN	San Juan	6445	37.67455	-109.364
7	Allen Farm	2076	Tennessee	SCAN	Giles	705	35.0747	-86.8938
8	Ames	2031	Iowa	SCAN	Boone	1073	42.01667	-93.7333

Zoom and Pan

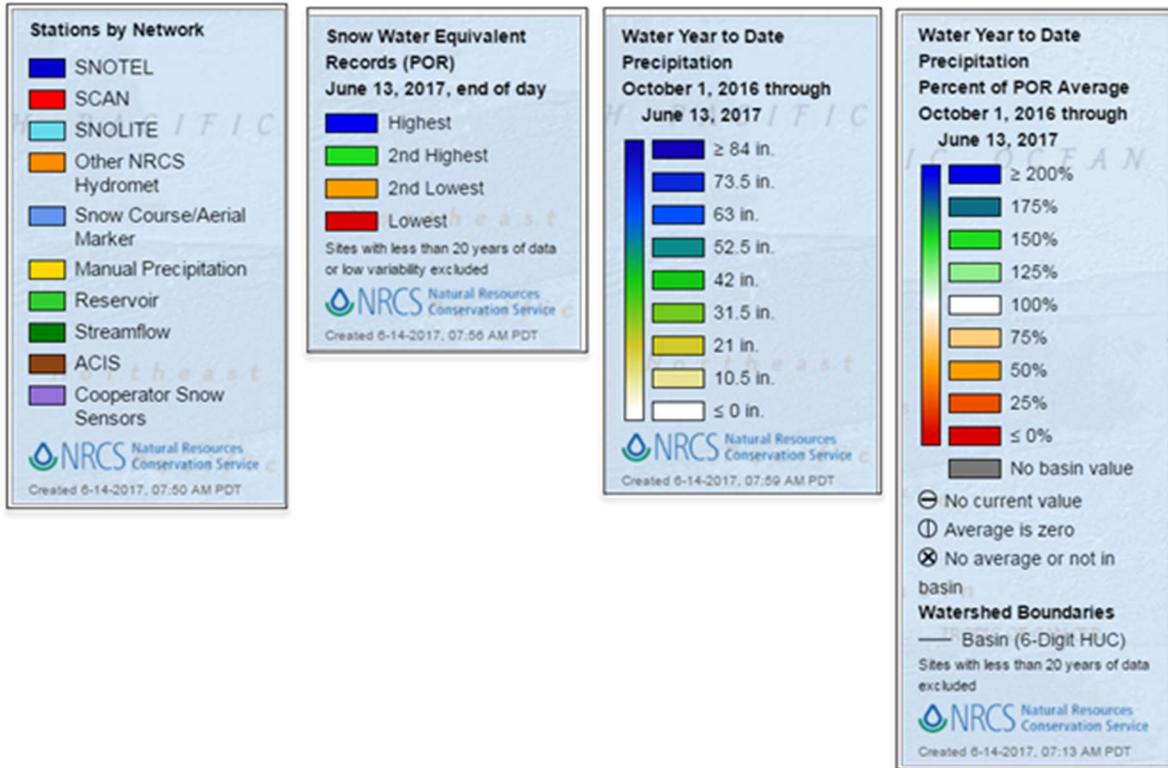
The Zoom (+) and Pan (-) controls let you focus your view of the Interactive Map. Zoom in or pan out to your area of interest. To move the map, simply left-click your mouse and slide to direct it to your desired location.

Full Screen Display

To view the map full-screen, click the  icon. The map will expand to the full extent of the monitor or display. To return to normal view, click the  icon, or select the **Esc** key.

Legends

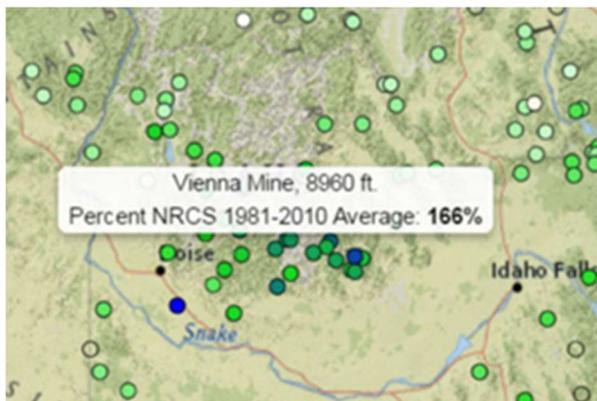
Map legends change depending on what view you're in, the selected elements and value types, and any overlays displayed. Here are four examples of legends. The first example depicts a typical legend when you're in **Station Inventory** view. The other examples show legends while in **Station Conditions** and **Basin Conditions** views.



The legend contains a label describing the type of data displayed on the map. The legend also contains the date and time the map was created.

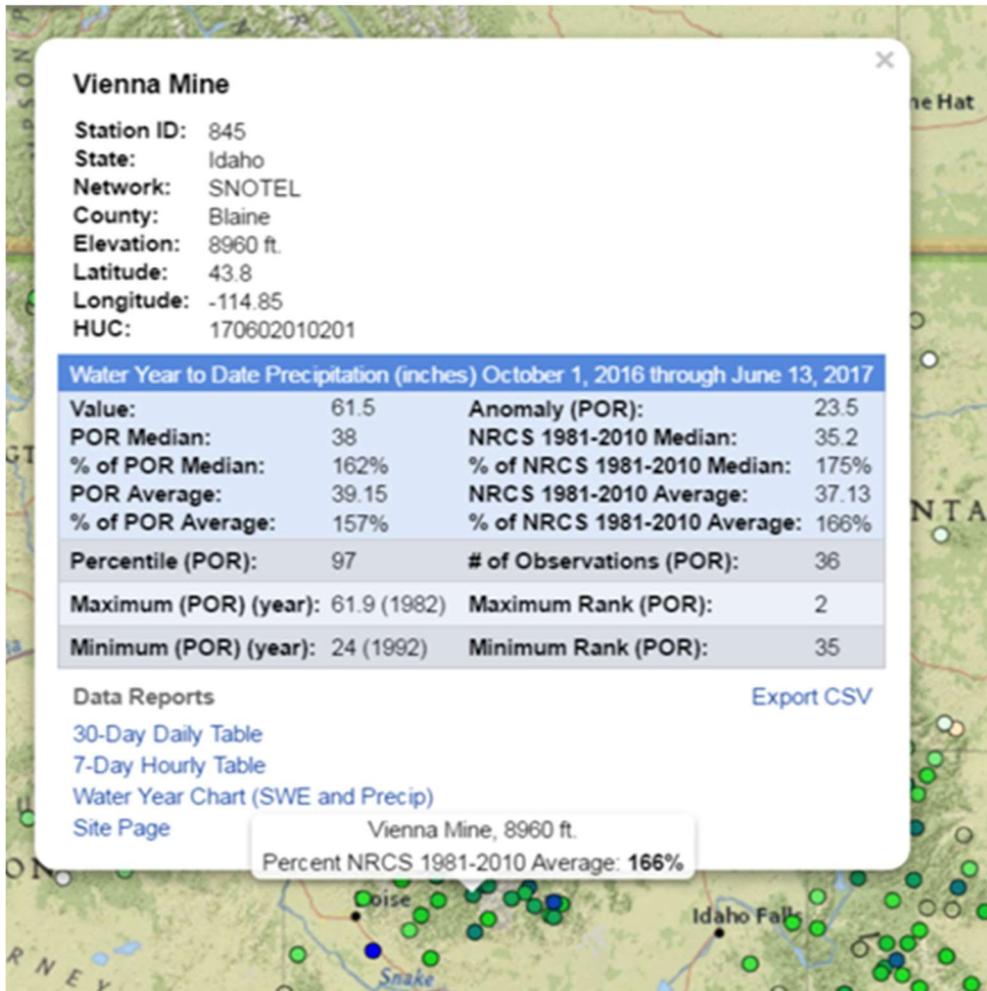
Display Station Information

The Interactive Map lets you display either abbreviated station information or drill down to more data and reports associated with the station. To display abbreviated information (such as site name and elevation), simply hover over the station with your mouse.



To display more information about the station, click on it. Depending on which view you're in and the selection criteria you've defined, the Interactive Map will display metadata, a table of related summary data for the station, and a selection of pre-defined data reports. You can also jump to the **Site Page** for the selected station, providing access to even more reports and data. In this example, the **Export**

CSV link downloads the Water Year to Date Precipitation data for the station in comma-separated value (CSV) format.



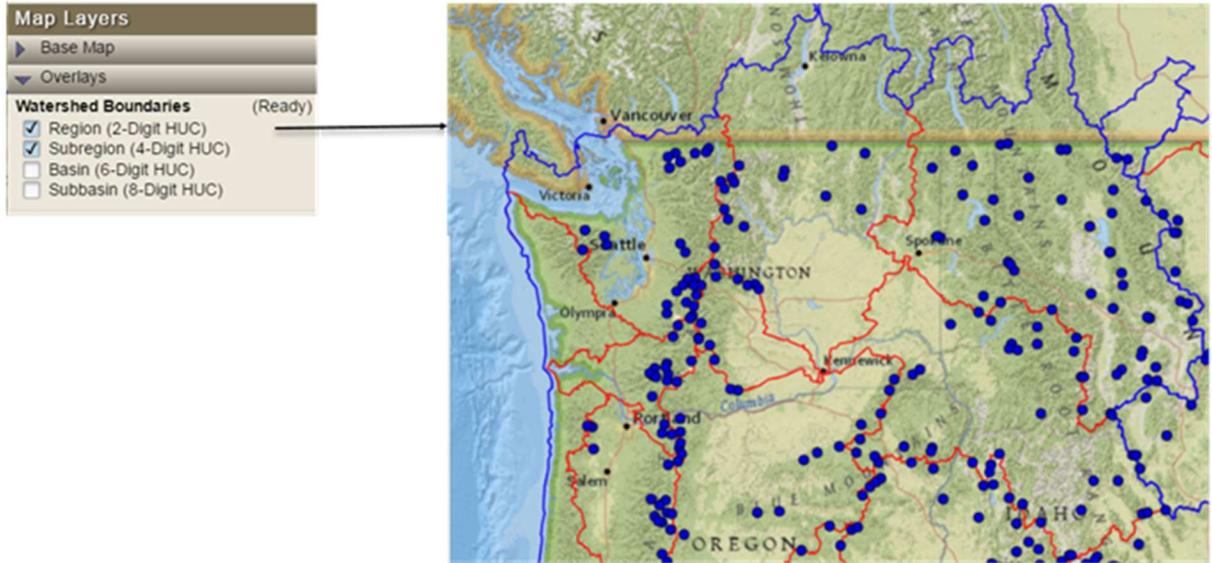
Comparing Map Views

The Interactive Map lets you display geographical regions using a variety of overlays and display options. The Interactive Map Boundary Views section shows what displays on the Interactive Map, depending on the view and label options you select.

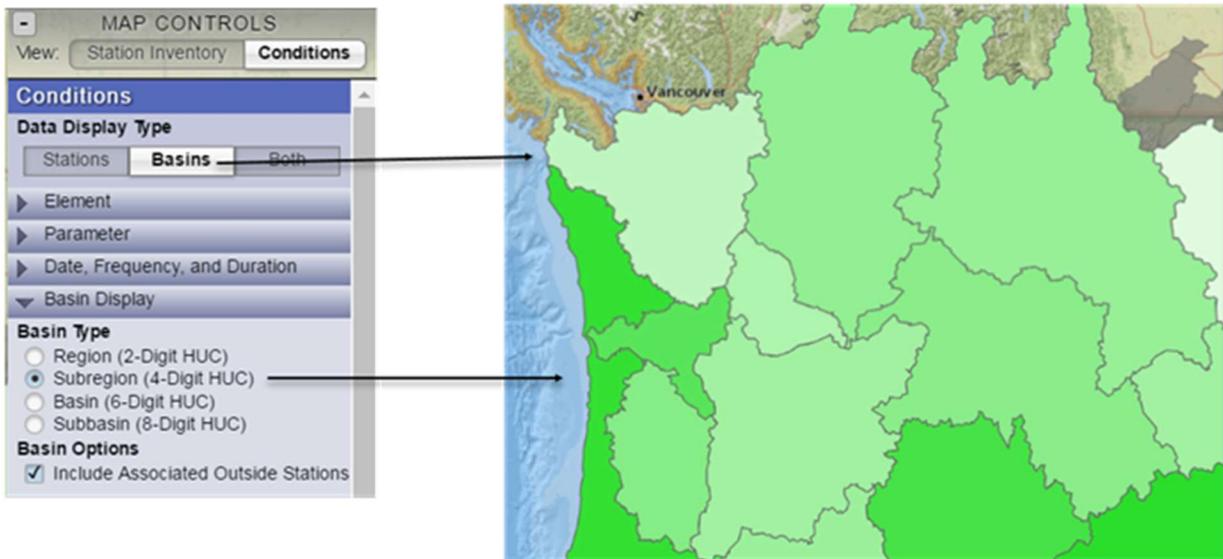
Interactive Map Boundary Views

There are several ways to view stations and watershed boundaries with the Interactive Map.

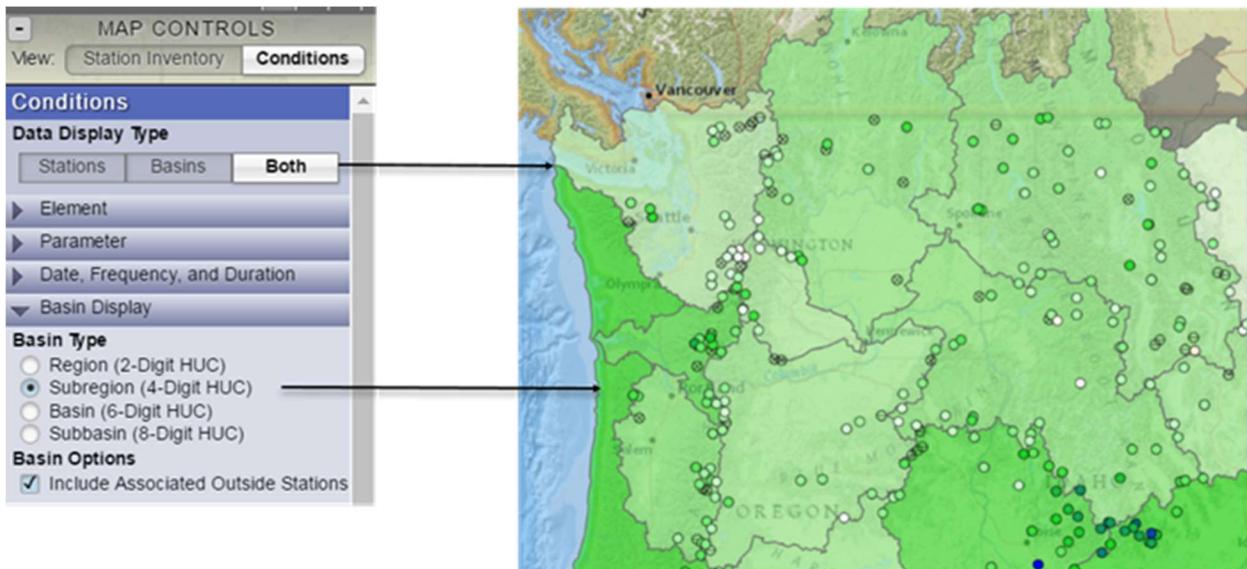
To display boundaries as outlines, at the bottom of the map controls, click the right arrow (▶) on the Overlays list to expand it. Click the checkbox next to any or all of the hydrological unit code (HUC) boundaries levels you wish to display. The example uses both Region (2-Digit HUC) and Subregion (4-Digit HUC) boundaries.



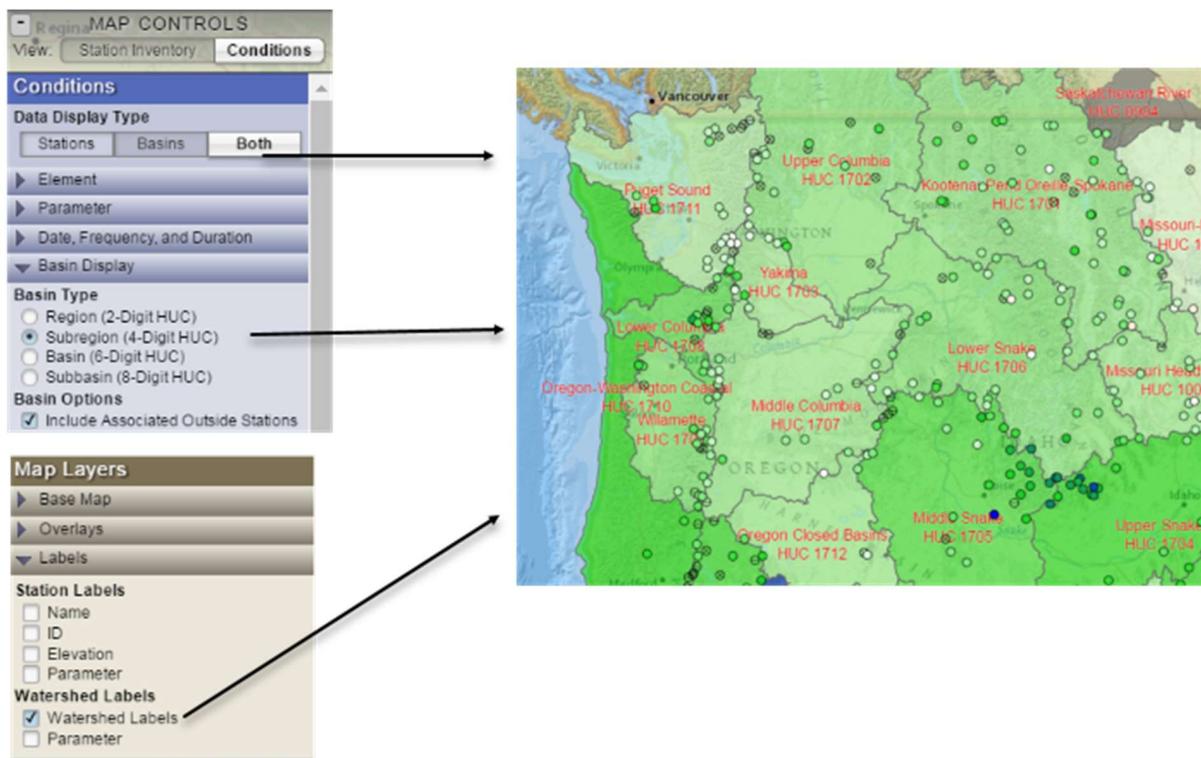
To show watershed boundaries as shaded regions only, go to Conditions View, select the Basins Data Display Type, then select the Basin Type, in this example, Subregion (4-Digit HUC).



To display both stations and shaded watershed boundaries, go to Conditions View, select the Both Data Display Type, then select the Basin Type, in this example, Subregion (4-Digit HUC).



To show labels associated with either stations or watershed boundaries, expand the Map Layers control and then select the Labels to display. This example uses Watershed Labels.



Map Controls

The Interactive Map controls display on the right side of the map.

Station Conditions Controls

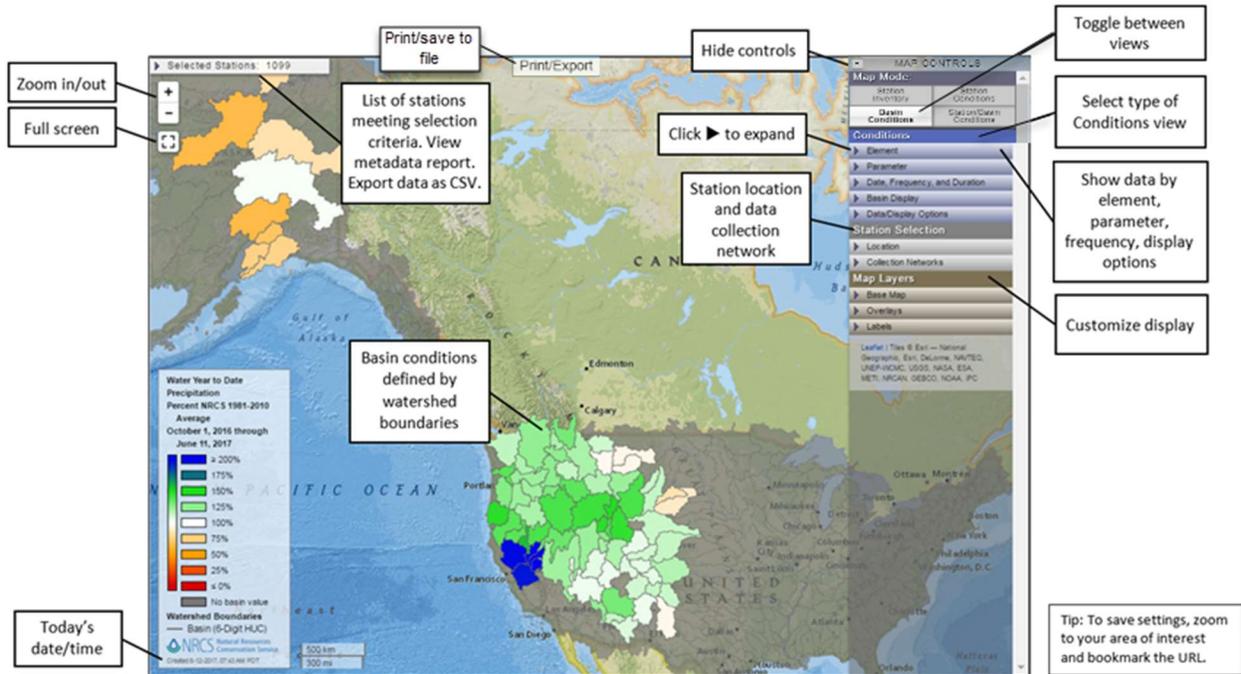
Station Conditions view displays stations based on three criteria you supply: the Element (such as Precipitation), the Parameter (such as Period of Record), and the desired Frequency and Duration. To minimize the display of any set of controls, select the down arrow (▼) next to the control name. Click the right arrow (▶) to expand a list.

The image displays three screenshots of the 'MAP CONTROLS' interface, each with specific sections highlighted and annotated with text:

- Left Screenshot:**
 - Filter stations by hydrometeorological element:** Points to the 'Conditions' section, specifically the 'Element' dropdown and the 'Snow Water Equivalent', 'Snow Depth', 'Snow Density', 'Precipitation', and 'Soil Moisture' options.
 - Define parameter used for map display:** Points to the 'Parameter' section, including 'Value', 'Percent of Central Tendencies', 'Anomaly', 'Compared to Period of Record', 'Central Tendencies', and 'Period of Record' options.
- Middle Screenshot:**
 - Define date, frequency, and duration of display, save URL with relative date:** Points to the 'Date, Frequency, and Duration' section, including 'Frequency', 'Duration', and 'Date (Last Day of Period)' controls.
 - Define reference period, display options, color sets, scale range, opacity:** Points to the 'Data/Display Options' section, including 'Reference Period', 'Minimum Years for Display', 'Color Sets', 'Scale Range', and 'Opacity' controls.
 - Filter stations by location using any combination of political (state/county) or physical (hydrologic units/elevation) boundaries:** Points to the 'Station Selection' section, including the 'Location' dropdown, 'States' list, and 'HUCs' input.
- Right Screenshot:**
 - Filter stations by data collection network:** Points to the 'Station Selection' section, specifically the 'Collection Networks' and 'Active Sites Only' options.
 - Change display of base map:** Points to the 'Map Layers' section, including the 'Base Map' dropdown and various map style options.
 - Overlay watershed boundaries by hydrologic unit code:** Points to the 'Overlays' section, specifically the 'Watershed Labels' options.
 - Show station and watershed labels:** Points to the 'Labels' section, including 'Station Labels' and 'Watershed Labels' options.

Basin Conditions Controls

Basin Conditions view displays river basins and watersheds based on four criteria you supply: the Element (such as Precipitation), the Parameter (such as Period of Record), the Hydrologic Unit Code (HUC) level, and the desired Frequency and Duration. To minimize the display of any set of controls, select the down arrow (▼) next to the control name. Click the right arrow (▶) to expand a list.



MAP CONTROLS

Map Mode: Station Inventory Station Conditions

Basin Conditions Station/Basin Conditions

Conditions

Element

Snow Water Equivalent

Snow Water Equivalent

Delta

Snow Depth

Snow Depth

Delta

Precipitation

Precipitation

Soil Moisture 8 in.

Soil Moisture

Delta

Soil Temperature 8 in.

Soil Temperature

Delta

Reservoir

Reservoir Storage

Delta

Streamflow Active Forecast Points Only

Adjusted Volume - Observed

Adjusted Volume - Forecast

Exceedance Probability: 50%

Parameter

Percent of Central Tendencies

Percent NRCS 1981-2010 Average

Percent NRCS 1981-2010 Median

Percent of POR Average

Percent of POR Median

Date, Frequency, and Duration

Frequency: Daily

Duration: Month to Date

or days

Date (Last Day of Period)

Year: 2018

Month: October

Day: 29

Go to Now Relative date in URI

Basin Display

Basin Type

Region (2-Digit HUC)

Subregion (4-Digit HUC)

Basin (8-Digit HUC)

Subbasin (8-Digit HUC)

State-Specific Basins

Arizona

Colorado

Idaho

Montana

Nevada

New Mexico

Oregon

Washington

Wyoming

Basin Options

Include Associated Outside Stations

Filter stations by hydrometeorological element

Define parameter used for map display

Define date, frequency, and duration of display; save URL with relative date

Define basin display options

MAP CONTROLS

Map Mode: Station Inventory Station Conditions

Basin Conditions Station/Basin Conditions

Conditions

Element

Parameter

Date, Frequency, and Duration

Basin Display

Data/Display Options

Reference Period

Period of Record

Fixed: 1981 to 2010

Minimum Years for Display: 20

Color Sets

Colors for Sequential Parameters

Colors for Divergent Parameters

Scale Range

Default [0% - 200%]

Range of Data [15% - 384%]

Custom: -

Opacity

Stations/Basins: 100

Basins (no data): 100

Basemap: 100

Mask: 0

Basin/Station Selection

Location

States All None Basins All None

Alabama

Alaska

Arizona

Arkansas

California

Colorado

Florida

Georgia

Alabama

Albemarle-Ch...

Alabama

Apalachicola

Barrow Alaska

Beaver Creek

Belle Fourche

Blue River

HUCs:

Include Associated Outside Stations

Minimum Elevation: ft.

Maximum Elevation: ft.

Collection Networks

Active Sites Only

Check All Uncheck All

USDA-NRCS Real-Time Networks

SNOTEL (887)

SCAN (220)

SNO-LITE (5)

Other NRCS Hydromet (5)

USDA-NRCS Non-Real-Time Networks

Snow Course/Aerial Marker (0)

Manual Precipitation (0)

Other Networks

Reservoir (0)

Streamflow (0)

ACIS (21)

Cooperator Snow Sensors (0)

Filter basins/stations by location using any combination of political (state/county) or physical (hydrologic units/elevation) boundaries

Define reference period, display options, color sets, scale range, opacity

Filter display by data collection network

MAP CONTROLS

Map Mode: Station Inventory Station Conditions

Basin Conditions Station/Basin Conditions

Conditions

Element

Parameter

Date, Frequency, and Duration

Basin Display

Data/Display Options

Basin/Station Selection

Location

Collection Networks

Map Layers

Base Map

OpenStreetMap Default

OpenStreetMap German

OpenStreetMap Black and White

OpenStreetMap H.O.T.

Esri WorldStreetMap

Esri DeLorme

Esri WorldTopoMap

Esri WorldImagery

Esri WorldTerrain

Esri WorldShadedRelief

Esri WorldPhysical

Esri OceanBasemap

Esri NatGeoWorldMap

Esri WorldToPOI/Canvas

Stamen Toner

Stamen Terrain

Stamen Watercolor

MapBox Example

Overlays

Watershed Boundaries (Ready)

Region (2-Digit HUC)

Subregion (4-Digit HUC)

Basin (8-Digit HUC)

Subbasin (8-Digit HUC)

State Watershed Boundaries (Ready)

Arizona

Colorado

Idaho

Montana

Nevada

New Mexico

Oregon

Washington

Wyoming

Political Boundaries (Ready)

States

Labels

Station Labels

Name

ID

Elevation

Parameter

Watershed Labels

Name

HUC

Parameter

Change display of base map

Overlay watershed boundaries by hydrologic unit code (HUC), state watershed, or political boundaries

Show station and watershed labels

Station Inventory View and Controls

Station Inventory view is essentially a site-selector, allowing you to filter the display of stations by Climatic Element, Location, and Data Collection Network. To minimize the display of any set of controls, select the down arrow (▼) next to the control name. Click the right arrow (▶) to expand a list.

The screenshot shows the Station Inventory View interface with several callout boxes explaining key features:

- Print/save to file**: Located at the top of the map area.
- Print/Export**: Located at the top of the map area.
- Zoom in/out**: Located on the left side of the map.
- Full screen**: Located on the left side of the map.
- List of stations meeting selection criteria. View metadata report. Export data as CSV.**: Points to the 'Selected Stations: 1099' dropdown menu.
- Hide controls**: Points to the 'Hide controls' button.
- Click ▶ to expand**: Points to the right arrow icon in the 'Conditions' menu.
- Station location and data collection network**: Points to the map area showing station locations.
- Toggle between views**: Points to the 'Map Mode' dropdown menu.
- Select type of Conditions view**: Points to the 'Conditions' menu.
- Show data by element, parameter, frequency, display options**: Points to the 'Data, Frequency, and Duration' menu.
- Customize display**: Points to the 'Map Layers' menu.
- Today's date/time**: Points to the 'Water Year to Date Precipitation' panel.
- Tip: To save settings, zoom to your area of interest and bookmark the URL.**: Located at the bottom right.

The central data panel for 'Flattop Mtn.' includes the following information:

Flattop Mtn.	
Station ID:	482
State:	Montana
Network:	SNOTEL
County:	Flathead
Elevation:	6300 ft.
Latitude:	48.8
Longitude:	-113.86
HUC:	170102070501

Water Year to Date Precipitation (inches) October 1, 2016 through June 12, 2017

Value:	73.8	Anomaly (POR):	14.4
POR Median:	59.4	NRCS 1981-2010 Median:	56.65
% of POR Average:	124%	% of NRCS 1981-2010 Average:	130%
POR Average:	59.91	NRCS 1981-2010 Average:	58.77
% of POR Average:	123%	% of NRCS 1981-2010 Average:	126%
Percentile (POR):	89	# of Observations (POR):	39
Maximum (POR) (year):	78.5 (1996)	Maximum Rank (POR):	5
Minimum (POR) (year):	39.3 (2001)	Minimum Rank (POR):	35

Data Reports

- 30-Day Daily Table
- 7-Day Hourly Table
- Water Year Chart (SWE and Precip)
- Site Page

Water Year to Date Precipitation
October 1, 2016 through June 12, 2017

Legend for precipitation (inches):

- ≥ 84 in.
- 73.5 in.
- 63 in.
- 52.5 in.
- 42 in.
- 31.5 in.
- 21 in.
- 10.5 in.
- 0 in.

MAP CONTROLS

Map Mode: Station Inventory | Station Conditions

Basin Conditions | Station/Basin Conditions

Conditions

Element

Snow Water Equivalent

Snow Water Equivalent

Delta

Water Year Peak

Date of Water Year Peak

Snow Depth

Snow Depth

Delta

Water Year Peak

Date of Water Year Peak

Snow Density

Snow Density

Delta

Precipitation

Precipitation

Soil Moisture 8 in.

Soil Moisture

Delta

Water Year Peak

Date of Water Year Peak

Soil Temperature 8 in.

Soil Temperature

Delta

Water Year Peak

Date of Water Year Peak

Reservoir

Reservoir Storage

Delta

Streamflow Active Forecast Points Only

Adjusted Volume - Observed

Adjusted Volume - Forecast

Exceedance Probability: 50%

Parameter

Value

Value

Percent of Central Tendencies

Percent NRCS 1981-2010 Average

Percent NRCS 1981-2010 Median

Percent of POR Average

Percent of POR Median

Anomaly

POR Median Departure

Compared to Period of Record

Percentile

Maximum Rank

Minimum Rank

Records

Central Tendencies

NRCS 1981-2010 Average

NRCS 1981-2010 Median

POR Average

POR Median

Period of Record

Minimum

Maximum

Year of Minimum

Year of Maximum

Number of Observations

Filter stations by hydrometeorological element

Define parameter used for map display

Define date, frequency, and duration of display; save URL with relative date

Define reference period, display options, color sets, scale range, opacity

Filter stations by location using any combination of political (state/county) or physical (hydrologic units/elevation) boundaries

MAP CONTROLS

Map Mode: Station Inventory | Station Conditions

Basin Conditions | Station/Basin Conditions

Conditions

Element

Parameter

Date, Frequency, and Duration

Frequency: Daily

Duration: Month to Date

or days

Date (Last Day of Period)

Year: 2018

Month: October

Day: 29

Go to Now Relative date in URL

Data/Display Options

Reference Period

Period of Record

Fixed: 1981 to 2010

Minimum Years for Display: 20

Color Sets

Colors for Sequential Parameters

Colors for Divergent Parameters

Scale Range

Default [0% - 200%]

Range of Data [15% - 384%]

Custom: -

Opacity

Stations/Basins: 100

Basins (no data): 100

Basemap: 100

Mask: 0

Station Selection

Location

States All None Counties All None

Alabama

Alaska

Arizona

Arkansas

California

Colorado

Florida

Georgia

--Alabama--

Baldwin

Colbert

Cullman

Dallas

Escambia

Houston

Macon

HUC:

Include Associated Outside Stations

Minimum Elevation: ft.

Maximum Elevation: ft.

Filter stations by data collection network

Change display of base map

Overlay watershed boundaries by hydrologic unit code

Show station and watershed labels

MAP CONTROLS

Map Mode: Station Inventory | Station Conditions

Basin Conditions | Station/Basin Conditions

Conditions

Element

Parameter

Date, Frequency, and Duration

Data/Display Options

Station Selection

Location

Collection Networks

Active Sites Only

Check All Uncheck All

USDA-NRCS Real-Time Networks

SNOTEL (867)

SCAN (222)

SNOLITE (5)

Other NRCS Hydromet (5)

USDA-NRCS Non-Real-Time Networks

Snow Course/Aerial Marker (0)

Manual Precipitation (0)

Other Networks

Reservoir (0)

Streamflow (0)

ACIS (21)

Cooperator Snow Sensors (0)

Map Layers

Base Map

OpenStreetMap Default

OpenStreetMap German

OpenStreetMap Black and White

OpenStreetMap H.O.T.

Esri WorldStreetMap

Esri DeLorme

Esri WorldTopoMap

Esri WorldImagery

Esri WorldTerrain

Esri WorldShadedRelief

Esri WorldPhysical

Esri OceanBasemap

Esri NatGeoWorldMap

Esri WorldGrayCanvas

Stamen Toner

Stamen Terrain

Stamen Watercolor

MapBox Example

Overlays

Labels

Station Labels

Name

ID

Elevation

Parameter

Watershed Labels

Name

HUC

Parameter

MAP CONTROLS

Map Mode: Station Inventory | Station Conditions

Basin Conditions | Station/Basin Conditions

Station Selection

Elements

Stations with all checked elements

Stations with any checked elements

Check All Uncheck All

Snow

Snow Water Equivalent

Snow Depth

Precipitation

Precipitation

Soils

Soil Moisture

Soil Temperature

Reservoir

Reservoir Storage

Streamflow

Adjusted Volume

Observed Volume

Diversion Discharge

Forecast Point

Location

States All None Counties All None

Alabama

Alaska

Arizona

Arkansas

California

Colorado

Florida

Georgia

--Alabama--

Baldwin

Colbert

Cullman

Dallas

Escambia

Houston

Macon

Display stations that have all or any of the selected elements

Filter stations by hydrometeorological element

Filter stations by location using any combination of political (state/county) or physical (hydrologic units/elevation)

MAP CONTROLS

Map Mode: Station Inventory | Station Conditions

Basin Conditions | Station/Basin Conditions

Station Selection

Elements

Location

Collection Networks

Map Layers

Base Map

OpenStreetMap Default

OpenStreetMap German

OpenStreetMap Black and White

OpenStreetMap H.O.T.

Esri WorldStreetMap

Esri DeLorme

Esri WorldTopoMap

Esri WorldImagery

Esri WorldTerrain

Esri WorldShadedRelief

Esri WorldPhysical

Esri OceanBasemap

Esri NatGeoWorldMap

Esri WorldGrayCanvas

Stamen Toner

Stamen Terrain

Stamen Watercolor

MapBox Example

Overlays

Watershed Boundaries (Ready)

Region (2-Digit HUC)

Subregion (4-Digit HUC)

Basin (6-Digit HUC)

Subbasin (8-Digit HUC)

State Watershed Boundaries (Ready)

Arizona

Colorado

Idaho

Montana

Nevada

Change display of base map

Overlay watershed boundaries by hydrologic unit code (HUC), state watershed

Interactive Map Mobile View and Controls

